

ULTRASONIC MONITOR OF MATERIAL IN COMPOSITION AND PARTICLE SIZE

ABSTRACT

[71] A method and apparatus for determining the composition of a containerized material, typically a suspension, through which ultrasonic waves are passed. The component ratios and particle sizes of a stationary or flowing material are determined by measuring ultrasonic wave phase and attenuation changes at multiple frequencies and deriving shape features from curves of the phase or attenuation versus frequency. Preferably, the frequency range employed extends below and above the frequency of maximum attenuation of the expected mean particle size in a suspension. The material composition is derived from analysis of the shape features of the derived curves.